

# Commonly Used QSUB Options in PBS Scripts or in the QSUB Command Line

## Category: Running Jobs with PBS

### DRAFT

This article is being reviewed for completeness and technical accuracy.

The "qsub" options can be read from the PBS directives of a PBS *job\_script* or from the qsub command line. For a complete list of available options, see **man qsub**. The more commonly used ones are listed below.

**-S *shell\_name***

Specifies the shell that interprets the job script

**-V**

Declares that all environment variables in the qsub command's environment are to be exported to the batch job

**-v *variable\_list***

Lists environment variables to be exported to the job

**-q *queue\_name***

Defines the destination of the job. The common possibilities for *queue\_name* on Pleiades and Columbia include *normal*, *debug*, *long*, and *low*

The *devel* queue on Pleiades is served by a non-default PBS server, pbspl3, and the syntax for qsub jobs to the *devel* queue needs to include pbspl3. Read [this article for more information](#).

**-l *resource\_list***

Specifies the resources that are required by the job and establishes a limit to the amount of resources that can be consumed. Commonly used resource items are slect, ncpus, walltime, and memory. See **man pbs\_resources** for a complete list of available resources.

**-e *path***

Directs the standard error output produced by the request to the stated file path

**-o *path***

Directs the standard output produced by the request to the stated file path.

**-j *join***

Declares that the standard output and error streams of the job should be merged (joined). The values for *join* can be:

**oe** standard output and error streams are merged in the standard output file

**eo** standard error and output streams are merged in the standard error file

**-m *mail\_options***

Defines the set of conditions under which the execution server will send mail message about the job. See **man qsub** for a list of *mail\_options*.

**-N *name***

Declares a name for the job

**-W *addl\_attributes***

Allows for the specification of additional job attributes

The most common ones are

**-W group\_list=*g\_list*** specifies the group the job runs under

**-W depend=afterany:*job\_ID.server\_name.nas.nasa.gov*** (for example, 12345.pbspl1.nas.nasa.gov) submits a job which is to be executed after *job\_ID* has finished with any exit status

**-W depend=afterok:*job\_ID.server\_name.nas.nasa.gov*** (for example, 12345.pbspl1.nas.nasa.gov) submits a job which is to be executed after *job\_ID* has finished with no errors

**-r *y/n***

Declares whether the job is rerunnable

The top of a PBS *job\_script* contains PBS directives, each of which begins with the string "#PBS". Here is an example for use on Pleiades.

```
#PBS -S /bin/csh
#PBS -V
#PBS -q long
#PBS -lselect=2:ncpus=8:mpiprocs=4:model=har,walltime=24:00:00
#PBS -j oe
#PBS -o /nobackup/zsmith/my_pbs_output
#PBS -N my_job_name
#PBS -m e
#PBS -W group_list=a0907
#PBS -r n
```

The resources and/or attributes set using options to the "qsub" command line override those set in the directives in the PBS *job\_script*.

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<http://www.nas.nasa.gov/hecc/support/kb/entry/175/?ajax=1>